B) Amendments to the Claims

Please amend claims 1-10, and cancel claims 11-32, as follows:

1. (currently amended) An inductive coupler for a wired pipe joint, comprising:

a first flux-loop inductive coupler element including a ring-like first core having high magnetic permeability, said first core defining a first axis, a first exterior substantially cylindrical face, and a first interior conical-section annular face, the first interior face defining a first larger-diameter face, a first smaller-diameter face, and an annular first groove, the first groove located between the first larger-diameter face and the first smaller-diameter face, and a first electrically conductive coil wound within said first groove; and

a second flux-loop inductive coupler element including a ring-like second core having high magnetic permeability, said second core defining a second axis, a second interior substantially cylindrical face and a second exterior conical-section annular face, the second exterior face defining a second smaller-diameter face, a second larger-diameter face, and an annular second groove, the second groove located between the second smaller-diameter face and the second larger-diameter face, and a second electrically conductive coil wound within said second groove;

wherein said first and second elements are adapted to mate with the first larger-diameter face facing the second larger-diameter face, and the first smaller-diameter face facing the second smaller-diameter face;

whereby said first and second cores form a low-reluctance closed ring-like magnetic path around said first and second coils.

2. (original) An inductive coupler according to claim 1, wherein the first interior conical-section annular face defines a conical shape with an apex on the first axis, and the second exterior conical-section annular face defines a conical shape with an apex on the second axis.

3. (original) An inductive coupler according to claim 1, wherein each core defines a conduit for passage of at least one electrical cable coupled to its coil.

4. (original) A first flux-loop inductive coupler element for electrical coupling with a second flux-loop inductive coupler element, said first flux-loop inductive coupler element comprising:

a ring-like core having high magnetic permeability and a conical-section annular face transverse to the plane of said core, the conical-section annular face having an annular groove dividing the conical-section annular face into a larger-diameter conical-section annular face and a smaller-diameter conical-section annular face; and

a coil wound within the annular groove.

5. (original) An inductive coupler element according to claim 4, further comprising a tubular support member adapted to mount said inductive coupler element within the bore of a wired pipe joint.

6. (original) An inductive coupler element according to claim 4, wherein said core defines a conduit for passage of at least one electrical cable coupled to said coil.

7. (currently amended) An inductive coupler element according to claim 4, wherein said coil does not substantially protrude forward of the ~~conical~~ conical-section annular face.

8. (original) A wired pipe joint, comprising:

an elongate tubular shank defining an axial bore and first and second ends;

electrical coupling means for providing electrical coupling from a location in the first end of said shank to a location in the second end of said shank;

a first flux-loop inductive coupler element located within the first end of said shank and connected to a first end of said electrical coupling means; and

a second flux-loop inductive coupler element located within the second end of said shank and connected to a second end of said electrical coupling means;

wherein each flux-loop inductive coupler element includes a ring-like core having a high magnetic permeability and a conical-section annular face transverse to the plane of said core, the conical-section annular face having an annular groove dividing the conical-section annular face into a larger-diameter conical-section annular face and a smaller-diameter conical-section annular face; and an electrically conductive coil wound within the annular groove.

9. (currently amended) A wired pipe joint according to claim 8, further comprising a first tubular support member adapted to mount said first inductive coupler element within ~~the~~ a first end of the axial bore, and a second tubular support member adapted to mount said second inductive coupler element within ~~the~~ a second end of the axial bore.

10. (currently amended) A wired pipe joint according to claim 8, wherein each said ring-like core defines a conduit for passage of at least one electrical cable coupled to said coil.

11-32. (canceled)